# Experiment 4: Extraction

Using immiscible mixtures to selectively pull a component from one phase into another. The same properties that cause a substance to crystalize, can cause it be pulled from one solution it is soluble in to another leaving undesired impurities behind.

We will be doing parts A and B of this experiment. We will not be doing parts C-E.

## Preparations

Read: Experiment 04 - Extraction (page 34)
Technique 12 - Extraction
Essay - Caffeine

Do: Prepare your lab notebook:
- State experiment objectives (for each part assigned)
- List materials used w/ properties (solvents used in previous experiments do not need to be repeated)
- Make a procedures bullet list (for each part assigned)

## Intended Learning Outcomes

* Know extraction is the technique of separating a desired substance from a mixture using relative solubilities of two solvents.
* Estimate which solvent a substance will likely be more soluble in by considering alkane/aryl groups, polar groups, hydrogen bonding groups, and acid-base groups of that substance.
* Predict which of given immiscible solvent pairs are likely to be more useful for separating a given mixture.
* Given the mass of solute recovered from a given volume of solvent, determine the mass volume concentration of that solution.
* Know the distribution coefficient (also called factor or ratio) is the relative mass volume concentration of two immiscible phases at equilibrium.
* Given the equilibrium concentration in mg/mL of a substance in two solvents, determine that substances distribution ratio between those solvents.
* Use the distribution coefficient of a pair of immiscible solvents to determine how much of a given mass of solute can be extracted from a given volume of those solvents to a given volume of the other.

## Report

Prepare a report for this experiment according to this experiments report description for the parts we accomplished. Include the questions with answers for this experiment, except any your instructor tells you to omit.